<u>REMARKS</u>

In the Office Action, Claims 1-15 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1-15 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Jain et al. (US 6,343,278) in view of Lupien et al. (US 5,689,652). Claims 1, 9, 13, and 14 have been amended. New Claims 16-31 have been added. Claims 1-31 are now pending in the application. Applicant submits that the claims are patentable over the cited art for reasons discussed in greater detail below.

<u>Brief Discussion of Aspects of the Present Application</u>

The present application is directed to facilitating the trading of orders having a premium associated therewith. Premiums for the orders are offered or demanded relative to a current market price for the orders. The orders are automatically paired for trading in accordance with their respective premiums. See, e.g., page 15, lines 19-28, and page 33, lines 10-26, of the present application. See also, in particular, the detailed discussion at page 94, line 16, to page 96, line 15. A premium for an order is also referred to as the "aggressiveness" of the order. If the aggressiveness is a positive value, then the order is offering a premium relative to the market. If the aggressiveness is a negative value, then the order is demanding a premium relative to the market.

The foregoing concepts are further explained at page 95, lines 10-30, with respect to FIGURE 90, where "oU" refers to an "order umpire" that facilitates trading:

> FIG. 90 is a flowchart showing match list aggressiveness processing. At step 2005, oU 30 initializes to the first pair of orders in its match list. At step 2010, using the liquidity curve specified by the respective order, and its matchable size, oU 30 determines the premium offered or demanded for each of the buy and sell sides. At step 2015, oU 30 classifies the order pair according to the buy and sell side premiums.

IVEN\25530AM1.DOC

If the classification is that both sides are offering a premium, then at step 2020, oU 30 sets the match price to the market price, and marks the order pair as matchable.

If the classification is that the premium offered by the buy side is at least as large as the premium demanded by the sell side, then at step 2025, oU 30 sets the match price to the market price plus the sell side premium, and marks the order pair as matchable.

If the classification is that the premium offered by the buy side is less than the premium demanded by the sell side, then at step 2030, oU 30 marks the order pair as unmatchable.

If the classification is that the premium demanded by the buy side is smaller than or equal to the premium offered by the sell side, then at step 2035, oU 30 sets the match price to the market price less the buy side premium, and marks the order pair as matchable.

If the classification is that the premium demanded by the buy side is greater than the premium offered by the sell side, then at step 2040, oU 30 marks the order pair as unmatchable.

If the classification is that the buy side and the sell side are both demanding premiums, then at step 2045, oU 30 marks the order pair as unmatchable.

At step 2050, oU 30 checks whether there are more pairs in its match list; if so, processing returns to step 2010, and if not, processing is complete.

An example illustrating this processing is set forth at page 96, line 16, to page 99, line 5, of the present application. The Examiner is requested to note in particular the "partial match check" and the "match-list aggressiveness check," where a reduction of a matchable size of an order results in a redetermination of the premium (or aggressiveness) of the order. See, e.g., the disclosure and Tables on page 98 of the application as filed.

Claims 1-12, 17, and 19-20 Are Patentable Over Jain '278 and Lupien '652

In rejecting Claim 1, the Office Action referred to the Abstract and to Col. 8, lines 55+; Col. 1, lines 39-46; Col. 2, lines 4-13; and Col. 9, lines 20+, of Jain. The Office Action cited

Lupien at Col. 3, line 43, to Col. 4, line 40, as well as the figures and Abstract, for allegedly disclosing batch processing of orders in accordance with respective associated liquidity curves. Applicant has carefully considered each of these passages and finds noticeably absent any disclosure that teaches or suggests all of the elements recited in amended Claim 1.

Jain relates to an order facility that permits a trader to submit a group of related orders, particularly for derivatives based on an underlying currency or other commodity. See Col. 2, lines 1-4. The group of orders may be subject to a common order limit whereby all of the related orders are automatically reduced whenever one such order is accepted. See Col. 2, lines 4-8, and Col. 9, lines 32-37. Once submitted, new orders are matched with outstanding orders in price/time priority. See Col. 3, lines 34-35.

Lupien teaches a crossing network that matches buy and sell orders according to satisfaction density profiles of the buyer and seller so that each trader is assured that the overall outcome maximizes the mutual satisfaction of all traders. See, e.g., the Abstract. Each satisfaction density profile characterizes a trader's degree of satisfaction with a transaction. For every buy/sell profile pair, a central matching computer (CMC) calculates a mutual satisfaction cross product. Trades are matched in order, starting with the highest value of mutual satisfaction. See Col. 4, lines 16-26.

In contrast to Jain and Lupien, Claim 1 of the present application calls for "automatically determining premiums offered or demanded for the orders in a batch at a particular price, wherein for a respective order, the premium adds to or subtracts from the particular price and sets a price for pairing," and "automatically pairing the orders in accordance with their respective premiums." Further according to Claim 1, "the premium for an order depends on the total size of the order that is matchable with one or more contra side orders and if a portion of the order is determined to be unmatchable in a pairing, [the method includes] reducing the total size of the

order that is matchable by the size of the unmatchable portion and redetermining the premium for the order in accordance with the reduced matchable size."

Jain fails to disclose or suggest anything relating to premiums offered or demanded for orders in a batch at a particular price, where the premium adds to or subtracts from the particular price and sets a price for pairing. Consequently, Jain also fails to disclose or suggest the remaining features, such as automatically pairing the orders in accordance with their respective premiums and redetermining the premium for unmatchable portions of orders, as set forth in Claim 1.

Lupien teaches the correlation of "satisfaction density profiles" of respective traders to "maximize the mutual satisfaction of all traders" (Abstract), but Lupien does not provide disclosure that cures the deficiencies of Jain relative to Claim 1. In particular, Lupien does not teach a process of determining premiums or pairing the orders in accordance with their respective premiums, nor does Lupien disclose the features wherein the premium for an order depends on the total size of the order that is matchable with one or more contra side orders and if a portion of the order is determined to be unmatchable in a pairing, the method including reducing the total size of the order that is matchable by the size of the unmatchable portion and redetermining the premium for the order in accordance with the reduced matchable size.

A *prima facie* case of obviousness requires references that, in a motivated combination, teach all the elements in the claims at issue as particularly arranged in the claims. Failing to disclose of all the elements of Claim 1, Jain and Lupien do not support a *prima facie* case of obviousness under Section 103. Claim 1 should be allowed.

Claims 2-15 are also patentable over Jain and Lupien, both for their dependence on allowable Claim 1, and for the additional subject matter they recite that is not disclosed by Jain

or Lupien. Specifically, Jain and Lupien (considered alone or in combination) fails to disclose, and thus does not anticipate the elements:

- wherein determining premiums occurs in accordance with respective liquidity curves associated with the orders in the batch (Claim 2), particularly wherein the liquidity curves are defined by the size in the order to be traded versus the premium to be offered or demanded at each size (Claim 17). The satisfaction density profiles are much more complicated, involve more parameters, and are more difficult to manage;

- wherein determining premiums occurs when the orders in the batch are posted to the batch process (Claim 3). The disclosure in Jain at Col. 9, lines 21-37, does not read on this feature.

- wherein automatically pairing includes giving preference to orders offering premiums, the preference being proportional to the size of the premium (Claim 4). The disclosure in Jain at Col. 9, lines 32-41, does not read on this feature.

- wherein automatically pairing includes giving preference to orders demanding premiums, the preference being inversely proportional to the size of the premium (Claim 5). The disclosure in Jain at Col. 9, lines 42-49, does not read on this feature.

- further comprising automatically setting the price for each pairing based on the premiums associated with the orders in the pairing (Claim 6). The disclosure in Jain at Col. 9, line 66, to Col. 10, line 22, does not read on this feature.

- wherein each pairing includes a buy order and a sell order, and automatically setting sets the pairing price to a market price when both orders are offering a

premium (Claim 7). The disclosure in Jain at Col. 8, line 55, to Col. 9, line 19, does not read on this feature.

- wherein each pairing includes a buy order and a sell order and the buy order offer premium is at least the sell order demand premium, and automatically setting sets the pairing price to a market price plus the sell order premium (Claim 8). The disclosure in Jain at Col. 9, lines 21+, does not read on this feature.

- wherein each pairing includes a buy order and a sell order and the sell order offer premium is at least the buy order demand premium, and automatically setting sets the pairing price to a market price less the buy order premium (Claim 9). The disclosure in Jain at Col. 9, line 66, to Col. 10, line 12, does not read on this feature.

- wherein each pairing includes a buy order and a sell order, and automatically setting marks the pairing as unmatchable when the premiums indicate lack of a mutually acceptable price (Claim 10). The Office Action did not specifically indicate where this feature is believed to be taught. Applicant submits that neither Jain nor Lupien discloses this feature.

- wherein the premiums indicate lack of a mutually acceptable price when (i) the buy order demand premium is greater than the sell order offer premium, (ii) the sell order demand premium is greater than the buy order offer premium, or (iii) the buy order and the sell order are both demanding premiums (Claim 11). The disclosure in Jain at Col. 10, lines 47+, does not read on this feature.

- further comprising automatically adjusting the price for a pairing when one of the orders in the pairing is also participating in an unmatchable pairing (Claim 12). The disclosure in Jain at Col. 10, lines 47+, does not read on this feature.

IVEN\25530AM1 DOC

- wherein the premium for each order is defined relative to the current market price of the order (Claim 19).

- wherein prior to automatically pairing the orders, the method further comprises sorting the orders in the batch for each side of a trade, wherein the orders are sorted from the order having the highest premium offered to the order having the highest premium demanded (Claim 20).

## Claims 13 and 18 Are Patentable Over Jain and Lupien

Claim 13 calls for "automatically converting liquidity curves respectively associated with the orders into premiums offered or demanded for the orders, wherein for a respective order, the premium adds to or subtracts from a particular price and sets a price for pairing, and wherein the premium for an order depends on the total size of the order that is matchable with one or more contra side orders," and "automatically posting the orders with premiums to a batch process, the batch process for automatically pairing the orders in accordance with their respective premiums, and if a portion of the order is determined to be unmatchable, then reducing the total size of the order that is matchable by the size of the unmatchable portion and redetermining the premium for the order in accordance with the reduced matchable size and the liquidity curve associated with the order."

Jain and Lupien fail to teach or suggest the elements of Claim 13 for many of the same reasons discussed above. Consequently, the disclosures of Jain and Lupien do not support a *prima facie* case of obviousness under Section 103. Claim 13 should be allowed.

## Claims 14-16 Are Patentable Over Jain and Lupien

Beginning on page 5 of the Office Action, Claims 14 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jain in view of Lupien et al. (US 5,689,652). Applicant respectfully requests reconsideration of these claims.

IVEN\25530AM1.DOC

Claim 14 calls for "automatically selecting an order processing methodology wherein a premium offered or demanded for the order at a particular price is automatically determined based on a liquidity curve and the order is automatically paired in accordance with its premium," and "automatically posting the order to a market operative according to the selected order processing methodology." Further according to Claim 14, "the premium for the order depends on the total size of the order that is matchable with one or more contra side orders at the market, and if a portion of the order is determined to be unmatchable at the market, [the method includes] reducing the total size of the order that is matchable by the size of the unmatchable portion and redetermining the premium for the order in accordance with the reduced matchable size and the liquidity curve associated with the order."

These elements are not disclosed by Jain or Lupien. As such, Claim 14 should be allowed.

For the reasons discussed above, neither Jain nor Lupien, alone or combined, teach all of the elements of Claims 2 and 14. Thus Claims 2 and 14 should be allowed.

Claims 15 and 16 depend from Claim 14 and incorporate all of the features that patentably distinguish Claim 14 over Jain and Lupien. Claims 15 and 16 also present additional subject matter that is not taught or suggested by Jain or Lupien ("wherein the market determines the premium when the order is posted thereto" and "the liquidity curve is defined by the size in the order to be traded versus the premium to be offered or demanded at each size"). Accordingly, Claims 15 and 16 should be allowed.

Claims 21-29 Are Patentable Over Jain and Lupien

New Claim 21 is directed to a computer system for facilitating trading of orders in a batch process. The computer system includes a computer having a processing component configured to automatically determine premiums to be offered or demanded for the orders at a

IVEN\25530AM1 DOC

particular price, wherein for a respective order, the premium adds to or subtracts from the particular price and sets a price for pairing. The processing component is further configured to automatically pair the orders in accordance with their respective premiums. The premium for an order depends on the total size of the order that is matchable with one or more contra side orders. If a portion of the order is determined to be unmatchable in a pairing, the processing component is configured to reduce the total size of the order that is matchable by the size of the unmatchable portion and redetermine the premium for the order in accordance with the reduced matchable size.

Applicant submits that Jain and Lupien do not teach or suggest all of the elements recited in Claim 21; thus Claim 21 should be allowed. Additionally, Claims 22-29 should be allowed, both for their dependence on Claim 21 and for the additional subject matter they recite.

Claims 30 and 31 Are Patentable Over Jain and Lupien

New Claim 30 is directed to a computer-accessible medium having executable instructions stored thereon for facilitating trading of orders in a batch process. The instructions, when executed, cause a computer to automatically convert liquidity curves respectively associated with the orders into premiums offered or demanded for the orders, wherein for a respective order, the premium adds to or subtracts from a particular price and sets a price for pairing, and wherein the premium for an order depends on the total size of the order that is matchable with one or more contra side orders. The instructions, when executed, further cause the computer to automatically post the orders with premiums to a batch process, the batch process for automatically pairing the orders in accordance with their respective premiums. If a portion of the order is determined to be unmatchable, the instructions further cause the computer to reduce the total size of the order that is matchable by the size of the unmatchable portion and

IVEN\25530AM1.DOC

redetermine the premium for the order in accordance with the reduced matchable size and the liquidity curve associated with the order.

Applicant submits that Jain and Lupien do not teach or suggest all of the elements recited in Claim 30; thus Claim 30 should be allowed. Additionally, Claim 31 should be allowed, both for its dependence on Claim 30 and for the additional subject matter it recites ("wherein the liquidity curves are defined by the size in the order to be traded versus the premium to be offered or demanded at each size").

## CONCLUSION

Applicant submits that Claims 1-31 are all in condition for allowance. Issuance of a Notice of Allowance at an early date is requested. Should any issues remain needing resolution prior to allowance, the Examiner is invited to contact the undersigned counsel by telephone.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^PLLC

Kevan L. Morgan
Registration No. 42,015
Direct Dial No. 206.695.1712

IVEN\25530AM1 DOC